occupy the University table at the Plymouth Marine Biological Laboratory.

Dr. W. N. Shaw, F.R.S., is to lecture on Thursdays during the present term on the physics of the ventilation of buildings. The lectures are given in the Cavendish Laboratory at 4.30 p.m.

The Arnold Gerstenberg studentship, value 90*l.* for two years, will be awarded in the Lent term, 1904. It is open to men and women who have obtained honours in the natural sciences tripos and propose to pursue philosophical study. The award will be made by means of essays on subjects set forth in the *University Reporter* (p. 431).

DR. G. N. STEWART, of Cleveland, U.S.A., has been offered and has accepted the professorship of physiology in the University of Chicago.

SPEAKING at a meeting of the Derbyshire Dairy Farmers' Association at Derby, on January 30, the Duke of Devonshire said he did not know what our educational system, as it had too generally been administered in the past, had done for the advantage of the farmers. They had seen it mainly from this point of view—that it had taken the best and brightest boys and girls from the country districts away to employment in the towns, and that it had done nothing to improve the character of the labour which was still left to them in the country. The education which the children received in rural districts might have been such as to fit the children for occupations in towns in various branches of industry, but it had not been such as to make a boy or a girl a better member of the agricultural community. What they wanted was, first, to form the character of the children, to make them honest, industrious, more reflecting and steadfast; and, next, to improve their intelligence so that they might be more capable of doing whatever class of work might fall to their lot in life in a better, more conscientious and intelligent manner. The village school which did not have this effect upon the children was not a school conducted as it ought to be. What was wanted for the children was not the cramming of them with facts, but teaching them something which might be applied to their daily life and might so interest them that they would prosecute its study after they left school and thus fit themselves more effectively for their daily labour, whether it were in the town or in the country. The training of their teachers had hitherto been too exclusively of a literary character, with, perhaps, a scientific smattering. It had not been directed to those subjects which related to agricultural life, to farming, dairying or the household.

IN proposing the toast of "The Mining and Metallurgical Industries," at the 30th annual dinner of the Royal School of Mines on Tuesday, the chairman, Mr. A. C. Claudet, referred to the steps that had been taken by the council of the Institution of Mining and Metallurgy with a view to effect the reorganisation of the Royal School of Mines. The *Times* reports Mr. Claudet to have said that, in the interests of the Empire no less than of the mining and metallurgical industries, prompt and far-reaching action was imperatively necessary if British-trained mining engineers and metallurgists were to hold their own in the future with foreign-trained engineers, and it was this conviction which led the council of the institution to take the matter in hand. Systems in force in America and elsewhere had been investigated, and the results communicated to the council of the college, with certain recommendations and the offer of material assistance in carrying them out. The matter was receiving the serious attention of the Board of Education, and the council of the institution had good grounds for feeling confident that comprehensive improvements would be effected at no distant date. It was believed that, if nothing unforeseen happened, British mining and metallurgical students would soon have facilities for training equal to the best in the world. The institution council proposed that a post-graduate course in practical work in mines and works at home or abroad should be established, and they had offered to give very material assistance in providing the necessary facilities for such a course on lines which they believed would be of the greatest possible benefit to British graduates. In connection with this post-graduate course the institution had presented scholarships to the Royal School of Mines, and to three or four other colleges as a beginning, and it was hoped that before long further scholarships and prizes would be available. The endowments and grants by Government in connection with mining and metallurgical training in this country were, as every one knew, ridiculously inadequate, and out of proportion to the vast interests involved—interests not merely local, but affecting the whole British Empire. However, there were many signs that the Government and other authorities were alive to the necessity of doing something promptly for this branch of education, and if they pressed their claims strongly and persistently he had no doubt at all that they would be met in a satisfactory manner. There was every reason to believe that their school would again occupy the position it once held, and ought still to hold—that of the premier mining school of the Empire, and second to none in the world.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, January 22.—"On the Electrodynamic and Thermal Relations of Energy of Magnetisation." By Dr. J. **Larmor**, Sec. R.S.

The main points which the author has sought to bring out in this paper are as follows:—

(1) In an electrodynamic field, there exists the usual specification of electrokinetic energy, but also *in addition* the energy of magnetisation of magnetic material.

(2) This energy of magnetisation appears as made up of a part given by the ordinary formula, which (when paramagnetic) is derived from thermal sources, and so in the absence of hysteresis has the limited mechanical availability of thermal energy, together with a local part which is to some extent thus available, but is also in part permanent intrinsic energy of the molecules, regarded temporarily as magnetic energy.

(3) The law of Curie, that the susceptibility of weak paramagnetic substances is inversely proportional to the absolute temperature, is involved in these statements.

(4) The extent of the direct (non-thermal) availability of *retained* magnetism can be inferred only by empirical procedure, for example, in general features by inspection of the hysteresis diagram as pointed out by Lord Rayleigh.

Physical Society, January 23.—Prof. S. P. Thompson, president, in the chair.—A paper on an oscillating table for determining moments of inertia was read by Mr. W. H. **Derriman.** The apparatus consists of a circular wooden table which can be suspended from a wire by means of brass supports. A pointer is attached to the centre of the bottom of the table and immediately below is another fixed pointer. In the top of the table a circular groove is cut, in which pieces of lead can slide. These pieces of lead form together half of a circular ring of rectangular cross section. The body, the moment of inertia of which is required, is placed in position on the table, and the lead weights moved until the two pointers are opposite to one another. The table therefore always oscillates about the same axis, and since the lead weights are at a fixed distance from this axis, the moment of inertia of the table remains constant. The apparatus can be employed for determining the moment of inertia of a body about any axis, and is useful for proving the law that the moment of inertia of a body about any axis is equal to its moment of inertia about a parallel axis through its centre of gravity, together with the moment of inertia of the whole mass, collected at its centre of gravity, about the given axis.—Mr. **Skinner** described an inertia balance by means of which moments of inertia can be determined without the use of stop watches. The table which carries the body is suspended by a wire. Fixed to the centre of the bottom of the table there is another wire, similar to the first, but twice as long. This wire carries a screwed brass bar, the axis of the bar being at right angles to the wire. At the middle point of this wire there is a pointer fixed at right angles to it, and on the brass bar are two weights which can be placed at varying distances from the axis. To the bottom of the bar is attached a fourth wire, the same length as the first one, and its lower end is clamped. By arranging so that the upper table oscillates to the left when the bar is oscillating to the right, and adjusting the weights on the brass bar until the pointer is stationary, the moments of inertia of bodies placed upon the table can be determined. The chairman referred to an inertia table designed by Prof.

Perry in which an aluminium ring was supported by a trifilar suspension.—A paper entitled "Note on an Elementary Treatment of Conducting Networks," by Prof. L. R. **Wilberforce,** was read by Mr. Derriman. In this paper the author shows that the well-known reciprocal relations between the parts of a conducting network can be readily established without an appeal to the properties of determinants.—A paper on the theory of the quadrant electrometer was read by Mr. G. W. **Walker.** For the purpose of some experiments which the author is taking up, he has found it necessary to examine carefully the theory of a symmetrical quadrant electrometer, and the results of his investigations are put forward in this paper. The late Dr. John Hopkinson pointed out the imperfection of the usual formula given by Maxwell, and also gave an empirical formula which closely represented his experiments. The general result is well known, namely, that the sensibility of the electrometer rises to a maximum as the potential of the needle is raised, and that any further increase in the potential of the needle reduces the sensibility. The author's experiments have been made with a sensitive electrometer by Bartels, of Göttingen, which shows a maximum sensibility when the potential of the needle is about 100 volts. The sensibility seems to go on diminishing after this, at least until very high voltages are used. The formula for a quadrant electrometer is investigated more rigidly than in the text-books, and an equation is arrived at which is practically identical with the empirical formula of Hopkinson, and represents exactly the results obtained by the author from a Bartels' electrometer. The equation contains a constant which must be positive to explain the results, and it is shown that this is the case. An investigation is then undertaken to obtain a numerical value for this constant.

Zoological Society, January 20.—Prof. G. B. Howes, F.R.S., vice-president, in the chair.—Mr. **Budgett** read a report on his recent expedition to Uganda. At Butyaba, on the east shore of Lake Albert, *Polypterus senegalus* and *Protopterus aethiopicus* were both abundant, and collections were made of the fishes of the lake and of the higher vertebrates. Mr. Budgett proceeded through the Budonga forest, where very large herds of elephant were frequently seen, to the Victoria Nile below the Murchison Falls. Here ten days were occupied in endeavouring to obtain the early stages of Polypterus, which was fairly abundant and was found to be spawning. The fertilisation of more than a hundred ova obtained, however, was not successful, and the most promising attempt yet made to breed Polypterus artificially again failed. Mr. Budgett proceeded to Wadelai overland, staying there a week, but was not very successful here in obtaining material of Polypterus; but some collections of fishes and birds were made. At Fashoda, several weeks were spent, and a good deal of information concerning *Polypterus senegalus*, *P. bichir* and *P. endlicheri* was obtained. Many anatomical preparations of fishes were also made here. Throughout the journey, many observations were made upon the birds and mammals, and the striking parallelism of the country of the Nile province of Uganda in its flora and avifauna to that of the Gambia colony on the west coast was especially noticed. Though some new light was shed upon the problem of the life-history of Polypterus, earlier stages than those previously observed were not obtained.—Mr. J. S. **Budgett** also read a paper on the spiracles of Polypterus, in which he stated his opinion that the spiracles of this fish were used to take in and give out air from the swim-bladder.—Mr. F. E. **Beddard,** F.R.S., read a communication dealing with the surface anatomy of the cerebral convolutions in Nasalis, Colobus and Cynopithecus. The wide differences which the brain of Cynopithecus shows from that of the baboons and its many points of resemblance to the brain of Semnopithecus were pointed out. Colobus was shown to closely resemble Macacus in the structure of its brain. Three brains of Nasalis were reported on, two of which the author owed to the kindness of Dr. Charles Hose, of Borneo. It was stated to be practically impossible to distinguish the brain of this genus from that of Semnopithecus.—Mr. G. A. **Boulenger,** F.R.S., read a paper on the fishes collected by Mr. G. L. Bates in Southern Cameroon. Examples of thirty-five species were contained in the collection; these were enumerated and the new species, nine in number, were described. One of the species was made the type of a new genus—Microsynodontis.—A communication from Mr. W. K. **Hutton** contained an account of the anatomy of a gephyrean worm from the Firth of Clyde. As the worm appeared to be hitherto undescribed, Mr. Hutton proposed to name it *Phascolosoma teres.*—A communication from Dr. J. G. **de Man** contained the description of a new species of freshwater crab from Upper Guinea, under the name *Potamon* (*Potamonautes*) *latidactylum.*—Mr. R. I. **Pocock** read a paper, prepared by the Hon. N. C. **Rothschild** and himself, containing a description of a new species of spider of the genus Phrynarachne, discovered by Messrs. Rothschild and E. E. Green in Ceylon. The members of this genus were noteworthy on account of the perfection of their imitation of a patch of bird's dung, which acted as a lure to butterflies.—A communication received from Dr. H. J. **Hansen,** of Copenhagen, contained a monograph on the crustacean genera Sergestes and Petalidium, with an excursus on the luminous organs of *Sergestes challengeri*, n.sp. During a visit to England last summer, Dr. Hansen was empowered by the authorities of the British Museum (Natural History) to examine all the specimens of reputed species of these genera preserved under their care in the extensive "Challenger" Collection. A minute investigation of all the specimens called for some systematic changes, but on the whole confirmed the view which he had expounded in 1896, namely, that many specific names had been needlessly applied to larval forms of species already known in the adult condition. On the other hand, Dr. Hansen found one single specific name covering specimens of four distinct species, two of these being new to science, and one of the new ones being exceptionally remarkable for the possession of luminous organs. These, which were not known to occur in any other species of the genus, were distributed in great numbers over the whole fabric of *Sergestes challengeri.*

EDINBURGH.

Royal Society, January 5.—Prof. Flint in the chair.—A paper by Mr. George **Romanes** was communicated in which the author argued that it was not necessary to suppose that the earth in the course of its evolution had passed through a molten or semi-fluid condition. He showed by definite calculations that the great compression of the interior parts of the earth implied an evolution of heat sufficient for all purposes. The paper gave rise to a lively discussion as to the internal condition of the earth and its probable history, Prof. Knott pointing out that the Helmholtz theory of gravitation, when applied to the earth in its present state, amply sufficed to account for the annual loss of heat. A very slight contraction would prevent the average temperature becoming lowered, although a certain amount of heat was lost every year.—In a paper on the isoclinal lines of a differential equation of the first order, Mr. J. H. Maclagan **Wedderburn,** following Lie's idea of a differential equation, namely, that the equation $\phi(x, y, p)=0$ attaches to every point (x, y) a direction $p\,(=dy/dx)$, discussed geometrically the singular loci of the integral curves by means of the singular loci of the family of curves obtained by regarding p as an arbitrary constant. This family it is proposed to call the isoclinal family. An isoclinal line has the property that the differential equation attaches the same direction to every point on it. The cases dealt with were where the p discriminant was (1) an envelope of the isoclinal family, (2) a locus of nodes, (3) a locus of cusps, the corresponding loci on the integral curve being (1) a locus of cusps, (2) a tac locus, (3) a locus of ramphoid cusps. Tac loci were divided into three classes, according as the curvature was in the same or opposite direction in the two cases, or an inflection on one of the curves. The method was applicable to equations of higher order than the first, and to partial differential equations.

January 19.—Lord Kelvin, president, in the chair.—Lord **Kelvin** read a paper on the reflection and refraction of light, in which further developments were given of two previous papers. In the earlier of these (*Phil. Mag.*, August, 1900), the dynamical difficulty of conceiving ponderable bodies capable of motion through the highly elastic solid such as ether seems to be was surmounted by supposing that within the sphere of action of an atom of matter the ether varied in density according to definite laws conditioned by assumed attractions and repulsions between the atoms and the elements of ether. As the ether flowed through the space occupied by the matter, or as the atom passed through the ether, the ether was imagined to become condensed towards the centre and rarefied towards the surface of the spherical atom in such a manner that the amount of ether within the spherical boundary was the same as if no atom were present.

This condensation and rarefaction of the ether gave to the matter a quasi inertia, in virtue of which particular kind of loading of the ether the velocity of light was affected and a change of refractive index produced. In the second paper referred to (see *Archives Néerlandaises des Sciences*, &c., November, 1901), the single electric fluid theory of Aepinus was "atomised," the negative electricity consisting of minute atoms called electrons much smaller than the atoms of ponderable matter. These electrons freely permeate the spaces occupied by the material atoms as well as empty space. They repel one another, but attract the atoms of matter, and the atoms of matter also repel one another. The electrons passing within the spherical atom tend to neutralise the action of the atom of matter, and in the overlapping of two atoms and the consequent transformation of old configurations of equilibrium of the atoms and the associated electrons into new configurations, an endless scope was found for explaining many electrical phenomena. Any such change in configuration would be followed by the electrons vibrating about their new positions of equilibrium and sending off ethereal waves through space. The non-neutralised material atom is supposed to repel the ether and the electron to attract it. In the neighbourhood of a neutralised atom, the ether is unaffected; but within the atom there are condensation and rarefaction of the ether, depending upon the particular distribution of electrons within it. When we consider the behaviour of such a dynamical system in regard to trains of ethereal waves incident upon it and, it may be, passing through it, not only are the well-known Fresnel laws for the reflection of polarised light at once obtained, but the phenomenon of metallic reflection finds an immediate explanation.—Sir John **Murray** and Mr. Laurence **Pullar** presented the first of a series of communications on the bathymetrical survey of the fresh-water lochs of Scotland, this first paper dealing with the lochs of the Tay Basin. During last summer, the work had been vigorously prosecuted, depths, temperatures, vegetable and animal life being specially studied. The oscillations familiar to the Swiss geologists and known as *Seiches* were also observed.—Dr. **Horne** followed up this paper with a lucid account of the geological features of the Tay Basin, illustrating the tectonic structure of the Highlands by means of sections, and drawing attention to the succession of uplifts and denudations which had affected the Tay Basin during geological time. The importance of the results obtained by Sir John Murray and his associates was dwelt upon, especially in regard to the strong evidence in favour of the glacier origin of certain of these lochs, notably Loch Tay itself, which could be nought else than a true rock basin produced by ice erosion.

PARIS.

Academy of Sciences, January 26.—M. Albert **Gaudry** in the chair.—Researches on the chinchona alkaloids: cinchonine, cinchonidine and cinchonamine, by MM. **Berthelot** and **Gaudechon.** A thermochemical paper giving the heats of combustion, formation and solution of these alkaloids and some of their salts. Recently precipitated cinchonine appears to possess the same physical state as crystallised cinchonine; cinchonidine behaved in a similar manner.—On some functions and point vectors in the motion of a fluid, by M. Paul **Appell.**—On the reducibility of differential equations, by M. Paul **Painlevé.**—The theory of the absorption of light by symmetrical crystals, by M. J. **Boussinesq.**—On the magnetic deviability and the nature of certain rays emitted by radium and polonium, by M. Henri **Becquerel.** It has been shown that the radiation from radium is partly deviated by a magnet, and that this portion of the rays is identical in properties with the kathode rays. The other part, considered as unaffected by a magnetic field, consists of two kinds of rays, one very penetrating and the other easily absorbed. The latter have recently been identified by Rutherford, under the name of the α-rays, with the canal rays of Goldstein. The electrical method used by Rutherford was one of extreme delicacy, but it appeared desirable to confirm this result by an independent method, and for this purpose measurements were made by a modification of the photographic method previously used by the author. The results were in general agreement with Rutherford's experiments, the α-rays resembling the canal rays in carrying positive charges with greater masses and smaller velocities than those of the kathode rays.—On the use of a telegraph wire for registering automatically earth vibrations and measuring their velocity of propagation, by M. G. **Lippmann.** In a continuous seismograph, considerations of cost necessitate a reduction of the curve to small dimensions, and an apparatus designed to give the curves on a large scale must be started during the earthquake, with the result that the first portion of the record is lost. A telegraphic arrangement is described by the author by which the arrival of the seismic wave at a distant station works a relay, starting the clockwork of the recording apparatus at a second station, advantage being taken of the relatively slow rate of transmission of the seismic disturbance. The same apparatus will also serve to measure this rate.—The principal results obtained in 1902 on the radial velocities of the stars, and on the causes of error peculiar to these researches, by M. H. **Deslandres.** The causes of error are numerous: optical and mechanical defects in the telescope and spectrograph, errors in adjustment, the effects of temperature changes on the flexure of the supports, and the varying condition of the atmosphere.—On two recent comets, by M. **Perrotin.** Of the two comets recently discovered by M. Giacobini at the Observatory of Nice, the first is new; the second may be identical with the Tempel-Swift comet, the return of which is expected about this time.—On the fourth campaign of the *Princess Alice II.*, by Prince **Albert I. of Monaco.** The work was carried out partly in the Mediterranean and partly in the North Atlantic. A summary of the results obtained in oceanography and zoology is given. In view of the results of M. Armand Gautier on the normal presence of arsenic in the animal organism, systematic search for this element was made on the animals caught during the voyage by M. Gabriel Bertrand, M. Gautier's views being completely confirmed.—The eruptions of dense clouds from Mont Pelée, by M. A. **Lacroix.** It was found possible to fix approximately the temperature of one of the hot blasts at a distance of 6 kilometres from the volcano; it was lower than the melting point of tin (230° C.) and higher than 125° C., since the latter was the temperature found for a layer of ashes some time after the eruption.—The Observatory of Besançon. The elements of the Giacobini comet (1902 *d*), by M. P. **Brück,** and observations of the Giacobini comet (1903 *a*), by M. P. **Chofardet.**—On regular differential systems, by M. Ch. **Riquier.**—On induced radio-activity and on the emanation from radium, by M. P. **Curie.** In a former note it was shown that the disappearance of the radio-activity induced by radium in a closed vessel and maintained at a constant temperature followed an exponential law with the time. Similar experiments have now been carried out at 450° C. and −180° C., and it has been found that the law is the same. From these results it is regarded as improbable that the effects accompanying the existence of the emanation can have their origin in chemical action, since there is no known chemical reaction the velocity of which remains constant over a temperature range from −180° C. to +450° C.—On the micrography of the nickel-steel alloys, by M. Léon **Guillet.**—On the existence of electrolytic superoxides of lead, nickel and bismuth, by M. A. **Hollard.** From the chemical formula, any weight of lead peroxide deposited electrolytically, multiplied by 0.866, should give the weight of lead.—Experiments were carried out with amounts of lead varying from 0.01 gr. to 10 gr. of lead, and the amount of peroxide deposited weighed. The results show that the factor 0.866 is only approached when large quantities of lead are present, the factor falling to 0.74 for the smallest amount. The author interprets this as being due to the formation of a higher oxide of lead, but no direct evidence of this is produced. Similar experiments with nickel and bismuth lead to the conclusion that the oxides NiO_4 and Bi_2O_7 can be separated electrolytically.—On the equilibria produced between copper, silicon and manganese, and on the silicide of manganese Si_2Mn, by M. P. **Lebeau.**—On two acids containing phosphorus derived from methyl-ethyl-ketone, by M. C. **Marie.**—On a new diiodophenol, by M. P. **Brenans.**—On the rotatory power in homologous ethers of borneol, isoborneol and camphocarbonic acid, by MM. J. **Minguin** and Gr. de **Bollemont.**—On the chlorination of aromatic substituted hydrocarbons by ammoniacal plumbic chloride, by MM. A. **Seyewetz** and P. **Trawitz.** The chlorinating action of $(NH_4)_2PbCl_6$ on chloro-, bromo-, iodo- and nitro-derivatives of aromatic hydrocarbons has been studied. Ortho-chlor-toluene is attacked es-

clusively in the methyl group; the para-derivative behaves similarly.—Researches on the αβ-dimethylglutaric acids, by M. E. É. **Blaise.**—The preparation and properties of 1 : 6 hexanediol or hexamethylene glycol and its principal derivatives, by M. l'Abbé J. **Hamonet.** Diphenoxyhexane is converted into diiodohexane by the action of hydriodic acid, and from this the acetin is obtained and hydrolysed, yielding the glycol, the properties of which are described.—Contribution to the physiology of the internal ear, by M. **Marage.** The experiments described are not in exact accordance with either of the current theories of audition. A third theory is developed, one of the consequences of which is that the variations of pressure in the internal ear are of the same order as actions affecting other nerves. The acoustic nerve thus ceases to be exceptional in its behaviour.—The evolutine cycle of tissues deprived of their intimate relations with nerves, by M. N. Alberto **Barbieri.**—On the ovule and fertilisation in the Asclepiadeæ, by M. Paul **Dop.**—Contribution to the study of the epiplasm in the Ascomycetes, by M. A. **Guillermond.**—On a cave containing fossils near Châteauneuf-les-Martignes, by MM. A. **Cotte** and Ch. **Cotte.**—On the former existence of a direct communication between the Parisian and Belgian basins, by M. Maurice **Leriche.**—On the laccolites on the north side of the Caucasus, by Mlle. Véra **Devis.**—On a drawing in the cave of Mas-d'Azil, by M. Edouard **Piette.**

DIARY OF SOCIETIES.

THURSDAY, FEBRUARY 5.

ROYAL SOCIETY.—In consequence of the death of Sir George Gabriel Stokes, no meeting will be held.

ROYAL INSTITUTION, at 5.—Arctic and Antarctic Exploration: Sir Clements Markham, K.C.B.

CHEMICAL SOCIETY, at 8.—(1) A New Vapour-Density Apparatus; (2) A New Principle for the Construction of a Pyrometer: J. S. Lumsden.

LINNEAN SOCIETY, at 8.—Stephanospermum, Brongniart, a Genus of Fossil Gymnospermous Seeds: Prof. F. W. Oliver.

RÖNTGEN SOCIETY, at 8.30.—Discussion on Some Points suggested by the Presidential Address of November, 1902, opened by J. H. Gardiner.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Adjourned Discussion on the Metric System.

FRIDAY, FEBRUARY 6.

ROYAL INSTITUTION, at 9.—George Romney and his Works: Sir Herbert Maxwell, Bart.

GEOLOGISTS' ASSOCIATION, at 7.30.—Annual General Meeting.—The President will deliver an address on The Recent Geological History of the Bergen District of Norway.

MONDAY, FEBRUARY 9.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Changes in the Neapolitan Coast Line: R. T. Günther.

SOCIETY OF ARTS, at 8.—Paper Manufacture: Julius Hübner.

TUESDAY, FEBRUARY 10.

ROYAL INSTITUTION, at 5.—The Physiology of Digestion: Prof. Allan Macfadyen.

SOCIETY OF ARTS, at 5.—Women in Canada: Countess of Aberdeen.

ANTHROPOLOGICAL INSTITUTE, at 8.15.—On Two Medicine Baskets from Sarawak: R. Shelford.—The Lo-Los and other Tribes of Yunnan: A. Henry.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Manufacture and Efficiency of Armour-piercing Projectiles: D. Carnegie.

WEDNESDAY, FEBRUARY 11.

SOCIETY OF ARTS, at 8.—The Port of London: Dr. B. W. Ginsburg.

THURSDAY, FEBRUARY 12.

ROYAL SOCIETY, at 4.30.—*Probable Papers:*—On the Decline of the Injury Current in Mammalian Nerve, and its Modification by Changes of Temperature: Miss S. C. M. Sowton and J. S. Macdonald.—On the Negative Variation in the Nerves of Warm-Blooded Animals: Dr. N. H. Alcock.—On the Optical Activity of Hæmoglobin and Globin: Prof. A. Gamgee, F.R.S., and A. Croft Hill.—On the Nucleo-Proteids of the Pancreas, Thymus and Suprarenal Gland, with especial reference to their Optical Activity: Prof. A. Gamgee, F.R.S., and Dr. W. Jones.—Studies in the Morphology of Spore-producing Members. No. V. General Comparisons and Conclusion: Prof. F. O. Bower, F.R.S.—Primitive Knot and Early Gastrulation Cavity coexisting with Independent Primitive Streak in Ornithorhynchus: Prof. J. T. Wilson and J. P. Hill.—The Brain of the Archæoceti: Prof. Elliot Smith.

ROYAL INSTITUTION, at 5.—Arctic and Antarctic Exploration: Sir Clements Markham, K.C.B.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—If the adjourned discussion on the Metric System is concluded at the Meeting on February 5, the adjourned discussion of Messrs. Scott and Esson's paper will be taken.

MATHEMATICAL SOCIETY, at 5.30.—Note on a Point in a Recent Paper by Prof. D. Hilbert: E. T. Dixon.—Some Properties of Binodal Quartics: H. Hilton.—The Field of Force due to a Moving Electron: Prof. A. W. Conway.—On Birational Transformations of the Type of Inversion: Prof. W. Burnside.

FRIDAY, FEBRUARY 13.

ROYAL INSTITUTION, at 9.—Health Dangers in Food: Prof. Sheridan Delépine.

ROYAL ASTRONOMICAL SOCIETY, at 5.—Anniversary Meeting.

PHYSICAL SOCIETY, at 5.—Address by the President elect.

MALACOLOGICAL SOCIETY, at 8.—Annual General Meeting.—Address on the Molluscan Larva in Classification: Prof. G. B. Howes, F.R.S.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Construction and Setting-out of Tunnels in the London Clay: H. A. Bartlett.

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SUPPLEMENT.